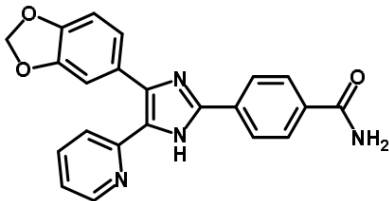




Product Specification Sheet

| | |
|------------------------------|--|
| Product Name | Stemolecule™ SB431542 in Solution |
| Description | SB431542 is an inhibitor of the transforming growth factor-beta 1 (TGF-β1) activin receptor-like kinases (ALKs). It is a selective and potent inhibitor of ALK-4, -5 and -7. SB431542 inhibits endogenous activin and TGF-β signaling without affecting more divergent BMP signaling utilizing ALK-1, -2, -3, and -6 ^{1,2} . SB431542 stimulates proliferation, differentiation, and sheet formation of endothelial cells derived from embryonic stem cells ³ . Stemolecule SB431542 in Solution is a ready to use stock solution for stem cell culture. |
| Catalog Number | 04-0010-05 |
| Size | 5 mg |
| Concentration | 10 mM in DMSO |
| Alternate Name | 4-[4-(1,3-benzodioxol-5-yl)-5-pyridin-2-yl-1H-imidazol-2-yl]benzamide |
| Chemical Formula | C ₂₂ H ₁₆ N ₄ O ₃ |
| Structure |  |
| Molecular Weight | 384.4 |
| CAS Number | 301836-41-9 (anhydrous) |
| Purity | Greater than 98% by HPLC analysis |
| Formulation | 10 mM solution of SB431542 in DMSO (5 mg in 1.3 ml) |
| Handling | Before opening, briefly centrifuge the vial to ensure full recovery of sample. Aliquoting the stock solution is recommended to avoid repetitive freeze-thaw cycles. For cell culture, the media should be prewarmed prior to adding the reconstituted compound. Note: for most cells, the maximum tolerance to DMSO is less than 0.5%. |
| Storage and Stability | Store solution at -20°C protected from light. Stable for 6 months from date of receipt when stored as directed. |
| Quality Control | The purity of SB431542 was determined by HPLC analysis. The accurate mass was determined by mass spectrometry. Cellular toxicity of SB431542 was tested on mouse embryonic stem cells. |

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Product Specification Sheet

References

1. Laping, N.J., Grygielko, E., Mathur, A., Butter, S., Bomberger, J., Tweed, C., Martin, W., Fornwald, J., Lehr, R., Harling, J., Gaster, L., Callahan, J.F., and Olson, B.A. (2002) Inhibition of transforming growth factor (TGF)-beta1-induced extracellular matrix with a novel inhibitor of the TGF-beta type I receptor kinase activity: SB-431542. *Mol Pharmacol* 62: 58-64.
2. Inman, G.J., Nicolás, F.J., Callahan, J.F., Harling, J.D., Gaster, L.M., Reith, A.D., Laping, N.J., and Hill, C.S. (2002) SB-431542 is a potent and specific inhibitor of transforming growth factor-beta superfamily type I activin receptor-like kinase (ALK) receptors ALK4, ALK5, and ALK7. *Mol Pharmacol* 62: 65-74.
3. Watabe, T., Nishihara, A., Mishima, K., Yamashita, J., Shimizu, K., Miyazawa, K., Nishikawa, S., and Miyazono, K. (2003) TGF-beta receptor kinase inhibitor enhances growth and integrity of embryonic stem cell-derived endothelial cells. *J Cell Biol.* 163: 1303-1311.

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